

2020-2021 Moose Hunting Seasons & Quota Ranges Justifications

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MOOSE

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MONTANA FISH, WILDLIFE & PARKS QUOTA CHANGE SUPPORTING INFORMATION

Species: Moose

Region: 3

Hunting Districts: 325 and 340

License Year: Biennium 2020-21

1. **Describe the proposed season /quota changes and provide a summary of prior history (i.e., prior history of permits, season types, etc.)**

HD 325: Create Antlerless moose license valid in this district only. Set Quota at 1 with quota range of 1-4.

HD 340: Create Antlerless moose license valid in this district only. Set Quota at 1 with quota range of 1-4.

Hunting Districts 325 (Big Hole) and 340 (Highlands) support relatively high densities of moose. From 2003-2011, both antlered and antlerless moose licenses were offered in both districts. With the increasing presence of wolves in SW Montana and high hunter harvest, moose populations declined and licenses were reduced accordingly, including the elimination of antlerless moose licenses (Table 1). Since then, moose populations have become more robust under more appropriate levels of harvest and as wolf populations have been effectively controlled under state management. In 2014 the boundary of HD 325 was expanded, which nearly doubled its size.

Table 1: Number of antlered and antlerless moose licenses offered in HDs 325 and 340, 2003-2018.

YEAR	HD 325 Antlered	HD 325 Antlerless		HD 340 Antlered	HD 340 Antlerless
2003	7	3		6	6
2004	7	3		10	10
2005	7	3		10	10
2006	7	5		10	10
2007	7	5		6	6
2008	5	5		3	6
2009	5	5		6	6
2010	3	1		2	1
2011	2	1		2	1
2012	2	0		2	0
2013	2	0		4	0
2014	4	0		4	0
2015	6	0		4	0
2016	6	0		4	0
2017	6	0		4	0

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2018	6	0		4	0
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2. What is the objective of this proposed change?

The objective of this proposed action is to provide maximum hunting and harvest opportunity while maintaining sustainable moose populations and wildlife watching opportunities and minimizing game damage complaints.

3. How will the success of this proposal be measured?

The effects of this proposal will be measured according to the three management objectives listed in #4, using population and harvest were available.

4. What is the current population's status in relation to the management objectives? (i.e., state management objectives from management plan if applicable; provide current and prior years of population survey, harvest, or other pertinent information).

While there is no formal management plan for moose at this time, there are implicit management objectives that are applied to all moose hunting districts managed by the Butte Area biologist. Those objectives are:

Objective # 1 - Maintain calf-to-adult ratios $\geq 20:100$ as observed from winter aerial surveys.

Objective # 2 - Sustain moose populations at such a level so that days per hunter is less than or equal to the long-term average for at least two of the past three years.

Objective # 3 - Sustain moose populations at such a level as to offer high-quality harvest success of $\geq 80\%$ for at least two of the past three years.

Population data is available for HD 325 from winter aerial surveys conducted annually across all Big Hole moose districts. There is no formal population survey for HD 340 so trend is derived anecdotally from landowners, hunters, recreationists and personal field observations. For objectives 2 and 3, harvest data from antlered moose will be used to measure sustainability until 3+ years' of data are available from the antlerless licenses. In addition, anecdotal evidence will continue to be part of the assessment. When it comes to managing moose a suite of indices, no matter how loose, are necessary since a single data string solid enough to manage moose by has yet to be discovered.

5. Provide information related to any weather/habitat factors, public or private land use or resident or nonresident hunting opportunity that have relevance to this change (i.e., habitat security, hunter access, vegetation surveys, weather index, snow conditions, temperature / precipitation information).

Both hunting districts contain large amounts of suitable moose habitat. HD 325 contains several tributaries to the Big Hole River that provide expanses of willow bottoms and swamps. In addition, stackyards and cattle feed lines support tens of moose during the winter. HD 340 contains the lower end of the Big Hole River, which provides braided cottonwood and willow bottoms. In addition, the uplands contain mountain mahogany and bitterbrush stands which provide excellent winter habitat for moose. Access to hunters in both districts is typically very good. Many landowners allow moose hunting on their property and access is very good on public land.

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6. Briefly describe the contacts you have made with individual sportsmen or landowners, public groups or organizations regarding this proposal and indicate their comments (both pro and con).

This proposal has been circulated amongst many interested parties via the Butte area wildlife biologist's distribution list.

Submitted by: Vanna Boccadori

Date: 20 September 2019

Approved: _____
Regional Supervisor / Date

Disapproved / Modified by: _____
Name / Date

Reason for Modification:

MONTANA FISH, WILDLIFE & PARKS HUNTING SEASON / QUOTA CHANGE SUPPORTING INFORMATION

Species: Moose

Region: 3

Hunting District: 361 and 362 (and small boundary change with HD 309)

Year: 2020-2021

1. Describe the proposed season / quotas changes and provide a summary of prior history (i.e., prior history of permits, season types, etc.).

The proposal is to join moose districts 361 and 362 into one unified moose district (Figure 1) which will have the same boundaries as deer and elk district 361. The alignment of the districts will modify <2 square miles of land in the Grayling Creek area, also influencing moose HD 309 to the north, making the new moose boundaries along the creek rather than the highway, giving the new moose district 361 the same legal description as deer and elk HD 361 (Figure 2). This proposal does not change the total quota of antlered bull licenses, which will remain at 4.

This proposal returns the moose district 361 to the same approximate boundaries it once had in 1983 and prior. The district was split along the South Fork of the Madison in 1984 to regulate hunter dispersal on the east and west sides of this South Hebgen unit. At the time, moose numbers were high, and up to 10 either-sex licenses and 15 antlered bull licenses were allowed in HD 361. By 1991, the either-sex opportunity was removed, and 5 antlered bull licenses were maintained in HD 361 until 2016. HD 362 never allowed high harvest, with 5 antlered bull licenses and 2 either-sex licenses. By 1991, the either-sex opportunity was removed in HD 362 as well, and 3 antlered bull licenses were maintained until 2012, dropping to 1 by 2015.

By 2016, hunter success rates in both districts, especially HD 362, had dropped significantly enough that MFWP proposed to essentially combine the districts by introducing the 399-50 license, valid for antlered bull in either HD 361 or HD 362, with a quota of 4. That quota was established based on the average harvest at the time. Comparing the success rates of the 3 years prior to this license type establishment with the 3 years after its establishment demonstrates its effectiveness: success improved from 30% (2013-2015) to 89% (2016-2018).

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The combination of districts under the 399-50 license met its proposed objective. This proposal for the 2020-2021 season makes the combination of districts official by dissolving HD 362 into HD 361, making one larger moose district, HD 361. This proposal will simplify regulations removing an unnecessary boundary and making the license number the hunter applies for the same as the unit he or she is hunting (i.e., now it will be a 361-51 license for HD 361). It will further simplify regulations by aligning the moose district with the deer-elk district of the same name at their common boundary.

2. **What is the objective of this proposed change? This could be a specific harvest amount or resulting population level or number of game damage complaints, etc.**

The proposed objective is to simplify the moose regulations for hunters reading the regulations, applying for licenses, and for interpreting district boundaries.

3. **How will the success of this proposal be measured? This could be annual game or harvest surveys, game damage complaints, etc.**

The proposal will be inherently successful as it will simplify the regulations from 2 districts into 1 district, from an uncommon boundary to a common one, and from an administrative license number to a district-specific license number.

4. **What is the current population's status in relation to the management objectives? (i.e., state management objectives from management plan if applicable; provide current and prior years of population survey, harvest, or other pertinent information).**

Lacking survey and inventory for moose, evaluation of seasons is imperfectly analyzed through hunter harvest data and hunter effort. The "rule of thumb" is to see harvest success rates average 80% through the years. This metric is imperfect but is the only one at hand for many districts (DeCesare et al. 2016). However, for districts with few licenses, small sample sizes results in difficulty when estimating harvest success rates (i.e., HD 362 has 1 license so in any year harvest success can only be 100% or 0). Hunter effort measures are also biased by that one individual's desires and circumstances in any year. Allowing licenses to be valid over a larger landscape allows better interpretation of success and effort over time: with 4 licenses, we may see 100%, 75%, 50%, 25%, or 0% success.

With the effective combination of these two districts under the 399-50 license for the last 3 years, we noted average harvest success rates of 89%. The districts are currently meeting objective.

5. **Provide information related to any weather/habitat factors, public or private land use or resident and nonresident hunting opportunity that have relevance to this change (i.e., habitat security, hunter access, vegetation surveys, weather index, snow conditions, and temperature / precipitation information).**

Since 2012, moose mortalities have been opportunistically documented. Vehicle-related mortalities are a dominant issue as well as disease/parasites, predation, poaching, and fence entanglement.

Moose hunting in both areas is opportunistic. Small districts, moose are thought to move between Island Park Idaho and Yellowstone National Park through this area.

6. **Briefly describe the contacts you have made with individual sportsmen or landowners, public groups or organizations regarding this proposal and indicate their comments (both pro and con).**

This proposal was vetted through hunter harvest reports and through dedicated communications to more than 200 sportsmen and women, agency personnel, NGOs, and landowners. Comments received back included appreciation for making larger, more simple districts and regulations.

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Literature Cited:

DeCesare, N., J. Newby, V. Boccadori, T. Chilton-Radandt, T. Their, D. Waltee, K. Podruzny, and J. A. Gude. 2016. Calibrating minimum counts and catch-per-unit-effort as indices of moose population trend. *Wildlife Society Bulletin* 40: 537-547.

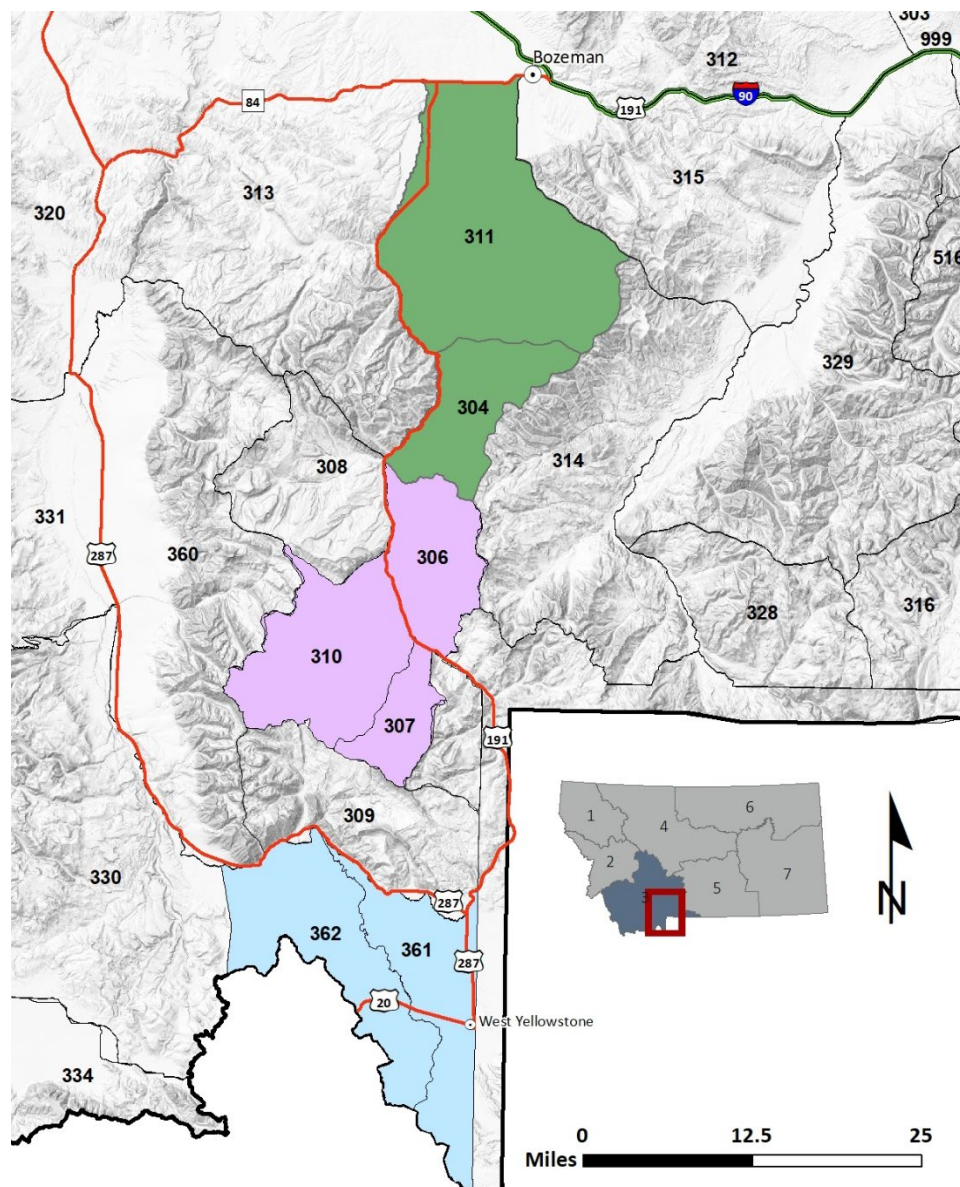


Figure 1: Proposed combinations of Bozeman Area moose districts. Current district boundaries are outlined in grey, proposed combinations are shaded the same color. This proposal is relevant to HD 362 and HD 361.

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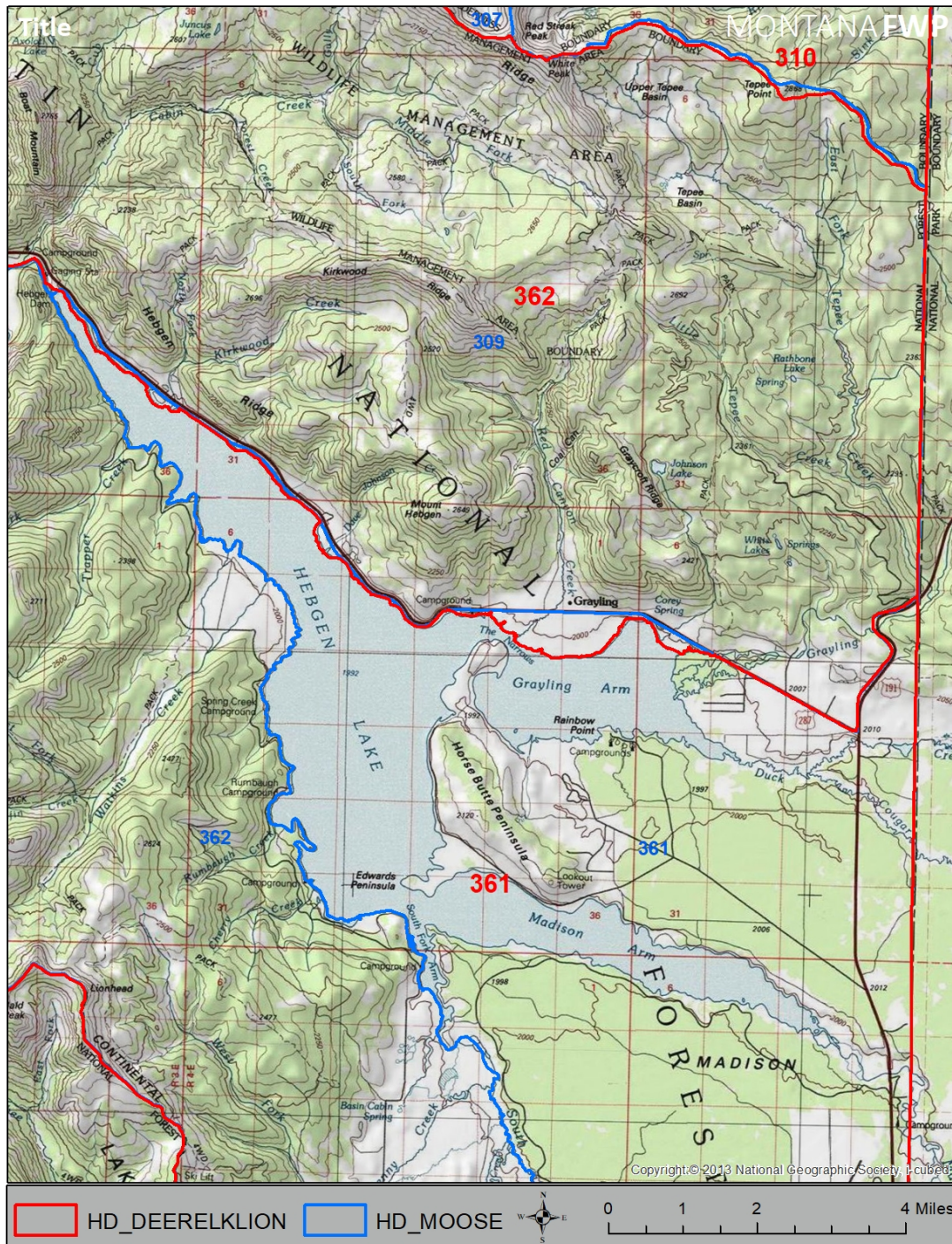


Figure 2: Proposed boundary adjustment between Moose HD 361 (blue) to align with Deer and Elk HD 361 (red). Deer and Elk districts use the north shore of Hebgen Lake whereas Moose districts had used the highway as a boundary. This district adjustment will influence moose HD 309 as well.

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MONTANA FISH, WILDLIFE & PARKS HUNTING SEASON / QUOTA CHANGE SUPPORTING INFORMATION

Species: Moose

Region: 4

Hunting District: 447 (NEW)

Year: 2020

1. Describe the proposed season / quotas changes and provide a summary of prior history (i.e., prior history of permits, season types, etc.). **REMEMBER THIS STEP IS TO BE ACCOMPLISHED BY THE INITIAL ENTRY INTO THE DATABASE—SO FOLKS CAN START THIS NARRATIVE WITH #2 BELOW.**

It is proposed to create a new moose Hunting District in the Highwood Mountains (HD 447) for the 2020 season, offering 1 bull moose license and a quota range of 1 -4.

2. **What is the objective of this proposed change? This could be a specific harvest amount or resulting population level or number of game damage complaints, etc.**

Objective of the proposal is to allow moose hunting and harvest opportunity as populations grow to huntable levels. The proposal would offer 1 bull moose license, which would also allow populations to continue to grow and expand, limiting harvest to male moose. Season structure would follow existing statewide moose season regulations that open on September 15 and closing concurrent to the general season. The proposed moose HD 447 encompasses all of Deer/Elk HD 447(Appendix A).

3. **How will the success of this proposal be measured? This could be annual game or harvest surveys, game damage complaints, etc.**

The proposed new moose HD will allow a new moose hunting and harvest opportunity. Demand for moose, sheep and goat licenses are very, very high and in reality, are a once in a lifetime experience.

4. **What is the current population's status in relation to the management objectives? (i.e., state management objectives from management plan if applicable; provide current and prior years of population survey, harvest, or other pertinent information).**

There is no official moose survey for the Highwoods, although incidental FWP staff, USFS staff, and hunter observations have greatly increased over the last 10 years. During FWP hunter survey questionnaires from 2012 – 2016, hunters reported 37, 39, 50, 56 and 29 moose observed in HD 447 (respectively). 2016 was not a full survey year. The past two winters elk surveys, 10 total moose were observed wintering in the interior of the Highwoods. Moose populations have also increased the last 20 years in North Central Montana, now having new moose seasons in Region 6 (HD 600) and Sweetgrass Hills (HD 401) and Rocky Mountain Front (HDs 441 and 415) since 2008.

5. **Provide information related to any weather/habitat factors, public or private land use or resident and nonresident hunting opportunity that have relevance to this change (i.e., habitat security, hunter access, vegetation surveys, weather index, snow conditions, and temperature / precipitation information).**

Year-round moose habitat exists in the Highwood Mountains, both on public and private lands. The Highwoods have on the highest percentages of aspen communities in the Lewis and Clark National Forest system. Large riparian drainages such as Shonkin, Willow, Highwood, Timber, Cottonwood, Arrow and Little Belt Creeks provide good moose habitat. The interior of the mountain range provides a mixed conifer forest providing year-round and security habitats. It is estimated that about ¾ of the moose in the Highwoods are located on public lands.

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6. Briefly describe the contacts you have made with individual sportsmen or landowners, public groups or organizations regarding this proposal and indicate their comments (both pro and con).

Area game wardens Keith Knighton, Dave Holland, Kqyn Kuka, Trenton Farmer, Kyle Anderson and Jim Smolczynski were contacted with the proposal, all in full support. Stanford USFS biologist David Kemp also voiced support for the proposal. Five area Landowners with the majority of moose habitat (Belt side of HD) were contacted as well, all supporting the license and access opportunity. Area sportsmen groups Russell Country Sportsmen, Great Falls Chapter Safari Club International, Montana Sportsmen Alliance were contacted regarding the proposal, all in full support.

Submitted by: Cory Loecker, Great Falls Area Wildlife Manager

Date: 10/5/2019

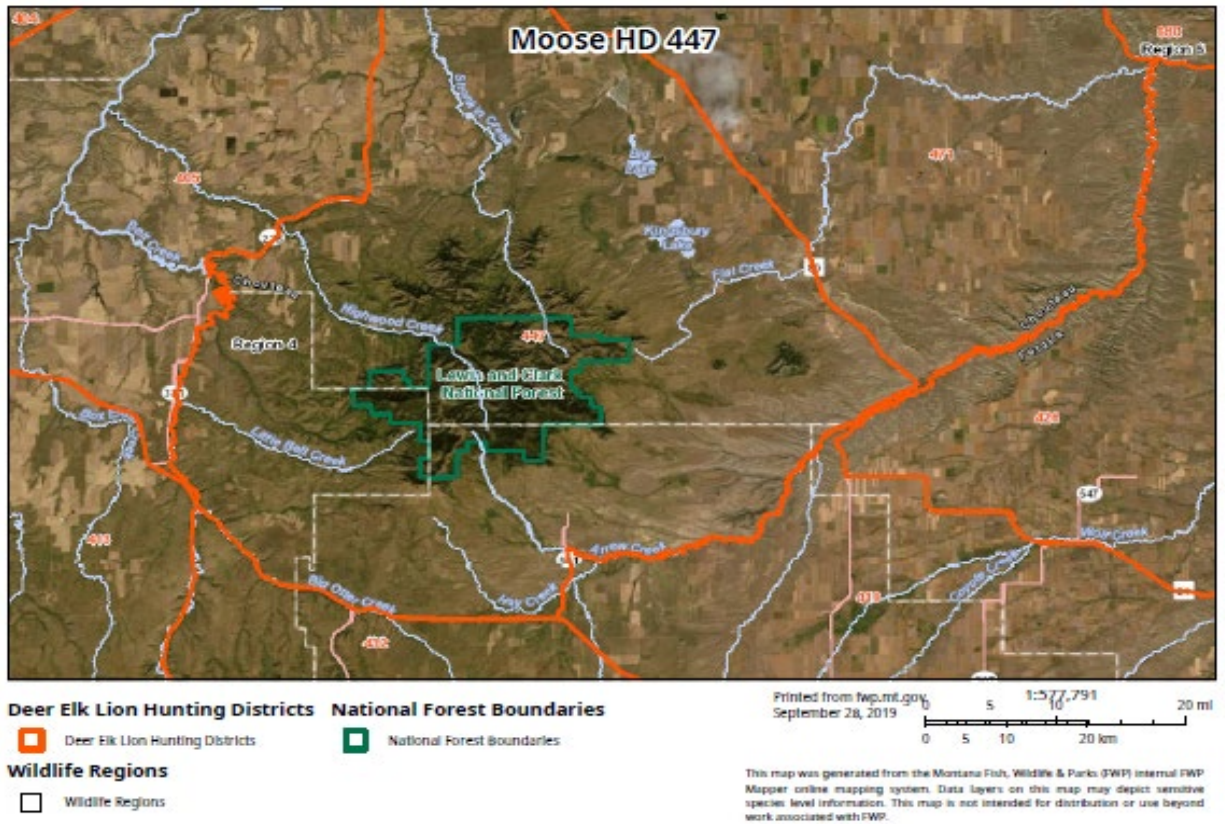
Approved: _____
Regional Supervisor / Date

Disapproved / Modified by: _____
Name / Date

Reason for Modification:

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Appendix A. Proposed moose HD 447 boundary (also deer/elk HD 447 boundary)



Some layers may not appear in the legend due to page size limitations.